

# Tranzinfo Hot Topic

Number 5 (Second edition) 2007

## Alternative Fuels

This is an update of a Hot Topic issue first released in 2006  
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A selection of recent publications and resources on issues relating to alternative fuels and technologies.

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### 1. Alternative fuels : the future of hydrogen

Hordeski MF  
Fairmont Press: Lilburne, GA, 2007  
242 pages

Addresses factors affecting current and emerging energy use choices, including the availability and desirability of various fuels – in particular hydrogen. Topics include fuel supply trends, statistics and projections, oil reserves, alternative scenarios, energy utilisation, cost analysis, fuel chain efficiency and air emission issues.

### 2. An empirical analysis on the adoption of alternative fuel vehicles: the case of natural gas vehicles

Yeh S  
Energy Policy, 2007  
November, Vol. 35 Issue 11, pages 5865-5875

Studies the technology adoption process associated with different market structures, effectiveness of regulations and incentives and the density of infrastructure adequate to reach sustainable commercial application. The paper compares the adoption of natural gas vehicles (NGV) in eight countries: Argentina, Brazil, China, India, Italy, New Zealand, Pakistan, and the US. It examines the major policies aimed at promoting the use of NGV's, instruments for implementing those policies and targeting likely stakeholders, and a range of factors that influence the adoption of NGVs. The findings in this paper should be applicable to other alternative fuel vehicles.

### 3. Australia's future oil supply and alternative fuels : final report

Australia. Parliament. Senate . Standing Committee on Rural and Regional Affairs and Transport  
The Committee: Canberra, 2007  
196 pages

This enquiry was prompted by the question of whether Australia should be concerned about peak oil . This term refers to the theory that , for fundamental geological reasons, global conventional oil production will reach a peak and then start an irreversible decline soon enough to be of concern.

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**4. Biofuel for thought : in all the recent brouhaha over biofuels some basic facts have been buried under emotive argument...the true potential for some promising alternative fuels.**

Dickson-Simpson J  
Transport Engineer, 2007  
July, pages 26-28

From a European perspective this article looks at the regions and circumstances under which biofuels are currently being grown and summarises the policy directions being taken by some European countries.

**5. Biofuels : is the cure worse than the disease?**

Doornbosch R, Steenblik R and OECD  
OECD, Paris, 2007  
SG/SD/RT(2007)3  
57 pages

Are biofuels the best way forward for transportation energy? The Roundtable for Sustainable Development report examines the technical potential of biofuels. It researches the consequences of current government policies on the production and prices of biofuels with a focus on agricultural markets, environmental implications and energy security.

**6. Biofuels for transport : global potential and implications for sustainable energy and agriculture**

Worldwatch Institute  
London: Earthscan, 2007  
452 pages

Prepared by the Worldwatch Institute for the German Ministry of Food, Agriculture and Consumer Protection, this report concludes that biofuels have a large potential to substitute for petroleum fuels used for 95 per cent of the world's transportation energy needs. Along with other strategies, including more efficient vehicles, it is ethanol and biodiesel which are seen as the principal biofuels.

**7. The biofuels promise : updated thinking**

O'Neill G  
Ecos, 2006  
October-November, Number 133, pages 22-25

An article looking at the production and implications of biofuels in Australia with input from experts from CSIRO, Murdoch University with reference to the Australian Government's Taskforce on Biofuels report released in September 2006.

**8. Fuel alternatives to gasoline**

Demirbas A  
Energy Sources Part B: Economics, Planning & Policy, 2007  
July, Vol. 2 Issue 3, pages 311-320

Explores the use of alternative fuels such as vegetable oil degradation products, alcohols, liquefied petroleum gas (LPG), compressed natural gas (CNG), hydrogen, and electricity for motor vehicles as opposed to gasoline or diesel which are non-renewable resources. Also discusses the use of methanol and ethanol for internal combustion engines.

## **9. Handbook of alternative fuel technologies**

Lee S, Speight J and Loyalka S  
London: CRC Press, 2007  
568 pages

Details the chemical processes for each technology, assessing the environmental impacts and performance of those processes and fuel products. Summarises in part the processing and transportation issues, safety concerns and regulations.

## **10. Importance of biodiesel as transportation fuel**

Demirbas A  
Energy Policy, 2007  
September, Vol. 35 Issue 9, pages 4661-4670

Explores the scarcity of known petroleum reserves and the use of renewable energy resources as their replacement for transportation fuel. Nominates biodiesel as the most suitable alternative for diesel fuels and investigates the advantages of biodiesel over gasoline and petroleum diesel. Also looks at the economic benefits of a biodiesel industry which includes value added to the feedstock, an increased number of rural manufacturing jobs and investments in plant and equipment.

## **11. Queensland Ethanol Industry Action Plan 2005-2007**

Queensland. Department of State Development and Innovation, 2007

This plan seeks to provide a policy framework that sets out government and industry development objectives for the ethanol industry in Queensland. The plan will facilitate consumer education, investment, product export development, further value-adding and technology uptake by building on current strategies and projecting those strategies forward. It provides a collaborative effort between government and industry.

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## **12. Solving the oil independence problem : is it possible?**

Sovacool BK  
Energy Policy, 2007  
Vol. 35 Issue 11, pages 5505-5514

This article discusses the development of alternative fuels in the United States and the possibility of the US becoming oil independent by 2030. Explores more than a dozen different sets of technologies and practices which could increase domestic fuel supply and reduce demand for oil, particularly in the transportation and buildings sector.

## **13. Transportation Energy Data Book**

Davis SC, Diegel SW & Oak Ridge National Laboratory  
Center for Transportation Analysis: Oak Ridge, TN., 2007  
336 pages

Chapter 6 of the 26th edition of this United States publication includes estimates and tables relating to alternative fuel and advanced technology vehicles and characteristics. Spreadsheets of the tables in the Transportation Energy Data Book can be found on the web at: [cta.ornl.gov/data](http://cta.ornl.gov/data)

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